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REMARKS/ARGUMENTS

Status of the Application

In the Advisory Action mailed May 9, 2005, the Examiner indicated that the amendments and remarks Applicants submitted in response to the Final Office Action mailed on January 12, 2005, did not place the application in condition for allowance. Specifically, the Examiner indicated that "[n]ew limitations in claim 26 will require further consideration."

In the Final Office Action, claims 26-35, 37, and 39 were rejected, and claims 36 and 38 were objected to. Applicants note that the Examiner indicated that claims 36 and 38 are allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In the present response, claim 26 has been amended to recite that the second polymerization catalyst has little or no tendency to copolymerize α -olefins with ethylene under polymerization conditions (see claim 28 and page 14, lines 24-31, for support). Claim 26 has also been amended to recite that the first and second active polymerization catalysts are selected from the group consisting of Ziegler-Natta and metallocene catalysts (see page 13, line 23 – page 14, line 3 and page 14, lines 11-25, for support).

A phrase has been deleted from claims 28 and 33 because it is redundant in light of the amendment to claim 26.

Claims 29 and 34 have been canceled. Thus, claims 26-28, 30-33, and 35-39 are pending. No new matter was added.

Rejections Under 35 U.S.C. 102(b)

Claims 26, 30-32, 35, and 37 were rejected under 35 U.S.C. § 102(b) as being anticipated by Ewen *et al.* (U.S. Patent No. 4,937,299). Applicants respectfully traverse these rejections.

The Examiner contends that different metallocene structures required in the process disclosed by Ewen *et al.* would inherently have different copolymerization activity because of their different structures. Therefore, according to the Examiner, the Ewen *et al.* disclosure would meet the requirement that the second catalyst does "not readily copolymerize" because the Applicants' definition of this phrase includes

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a scope wherein any difference at all in copolymerization activity meets the definition. In response to the Examiner's argument, this phrase has been deleted from claim 26. The deleted phrase has been replaced by the phrase "little or no tendency to copolymerize," which should be allowable over Ewen *et al.*, inferred from the fact that neither claim 28 nor claim 33 were rejected over this reference.

Because claims 30-32, 35, and 37 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner's assertion that claims 30-32, 35, and 37 are anticipated by Ewen *et al.*

Claims 26 and 30-32 were rejected under 35 U.S.C. § 102(b) as being anticipated by Nowlin *et al.* (U.S. Patent No. 5,539,076). Applicants respectfully traverse these rejections.

The Examiner states that Nowlin *et al.* teach, *inter alia*, a method of polymerizing ethylene with hexene using two different supported transition metal catalysts, including all claim limitations. Further, the Examiner reasons that, because the catalyst structures in the Nowlin *et al.* process are different, the catalyst structures would inherently have different copolymerization activity. Therefore, according to the Examiner, the Nowlin *et al.* disclosure would meet the requirement that the second catalyst does "not readily copolymerize" because the Applicants' definition of this phrase includes a scope wherein any difference at all in copolymerization activity meets the definition.

In response to the Examiner's reasoning, as mentioned previously, this phrase has been deleted from claim 26. The deleted phrase has been replaced by the phrase "little or no tendency to copolymerize," which should be allowable over Nowlin *et al.*, inferred from the fact that neither claim 28 nor claim 33 were rejected over this reference.

Because claims 30-32 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner's assertion that claims 30-32 are anticipated by Nowlin *et al.*

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Claims 26 and 28-34 were rejected under 35 U.S.C. § 102(e) as being anticipated by Bennett *et al.* (U.S. Patent Application No. 2002/0077432). Applicants respectfully traverse these rejections.

Claims 26 and 28-34 were apparently rejected because the Examiner contends that Bennett *et al.* teach a method of copolymerizing olefins comprising the use of an early transition metal catalyst and a late transition metal catalyst. Further, according to the Examiner, Bennett *et al.* teach that preferred species of the late transition metal are iron, ruthenium, cobalt, or rhodium catalysts.

In light of the Examiner's contention, claim 26 is limited in that both the first and the second active polymerization catalysts are now selected from the group consisting of Ziegler-Natta catalysts and metallocenes. Therefore, certain catalyst complexes, particularly certain iron complexes, are now not included in the polymerization catalysts. Applicants thus believe that this rejection is overcome as a result of this particular amendment to claim 26.

Because claims 28-33 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner's assertion that claims 28-33 are anticipated by Bennett *et al.* Because claim 34 was canceled, the rejection of that claim is moot.

Rejections Under 35 U.S.C § 103(a)

Claims 26 and 29-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Gibson *et al.* (U. S. Patent No. 6,461,994). Applicants respectfully traverse these rejections.

The Examiner states that Gibson *et al.* is directed to the use of tridentate ligands of transition metal catalysts, particularly Fe species, as polymerization catalysts. Further, according to the Examiner, because Gibson *et al.* suggest the addition of a second supported catalyst, such as a metallocene, Ziegler-Natta, or Phillips catalyst component to the process set forth in an example in Gibson *et al.*, an ordinarily skilled chemist would "immediately envisage" that such a use would necessarily result in an *in situ* blend. Furthermore, the Examiner reasons that, because the two catalysts have substantially different structures, the catalysts would

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have a different copolymerization activity. Therefore, according to the Examiner, a person of ordinary skill in the art would be motivated to add a second supported catalyst to the exemplified methods.

In light of Examiner's reasoning and interpretation of Gibson *et al.*, Applicants have limited claim 26 in that both the first and the second active polymerization catalysts are now selected from the group consisting of Ziegler-Natta catalysts and metallocenes. Therefore, certain catalyst complexes, particularly certain iron complexes of tridentate ligands, are now not included in the polymerization catalysts. Applicants believe that the obviousness rejection is overcome as a result of this particular amendment to claim 26.

Because claims 30-32 are dependent claims, which recite even further limitations to the claim that has already been traversed, Applicants rely upon the arguments presented above in rebuttal to the Examiner's assertion that claims 30-32 are unpatentable over Gibson *et al.* Claim 29 has been canceled because it is redundant in light of the amendment to claim 26.

Claims 27 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bennett *et al.* Applicants respectfully traverse these rejections.

The Examiner states that the only element of the claim 26 invention that Bennett *et al.* do not recite is that corresponding to the specific identification of which monomers should be selected when adding more than one comonomer. According to the Examiner, however, Bennett *et al.* disclose that the process may comprise one or more olefinic comonomers such as ethylene or C₃-C₂₀ alpha olefins. Therefore, the Examiner asserts that one of ordinary skill in the art would be motivated to select from at least the simplest group including ethylene in combination with propylene and butene, or butene with hexene. Because Bennett *et al.* state that these types of copolymerizations are within the scope of the disclosed process, the Examiner asserts that reasonable success would be expected.

Applicants respectfully disagree with the Examiner's reasoning of obviousness under 35 U.S.C. § 103(a) with reference to Bennett *et al.* Section 2142 of the MPEP states that a *prima facie* case of obviousness is established only when:

- (1) all of the claim limitations are either taught, or suggested by the cited prior art;

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- (2) there is some suggestion or motivation to modify or combine the cited prior art references; and
- (3) there is a reasonable expectation of successfully producing the claimed invention via such a combination.

Applicants respectfully submit that because prong (1) of the above test is not satisfied, a *prima facie* case of obviousness is not established. Specifically, Applicants respectfully disagree that Bennett *et al.* disclose all elements of the present invention, except the selection of monomer. In fact, Bennett *et al.* require the presence of at least one late transition metal catalyst *and* at least one early transition metal catalyst (see, e.g., the Abstract; paragraph 0001; and page 8, claim 1). Contrariwise, the claimed catalyst combinations of the present invention utilize early transition metals (and sometimes lanthanide metals) *only*, as is well known in pertinent art. Therefore, Bennett *et al.* do not render these claims obvious as they neither teach nor suggest the use of only early transition metal compounds as polymerization catalysts.

Summary

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. In order to expedite disposition of this case, the Examiner is invited to contact Applicants' representative at the telephone number below to resolve any remaining issues. Should there be a fee due which is not accounted for, please charge such fee to Deposit Account No. 04-1928 (E.I. du Pont de Nemours and Company).

Respectfully submitted,

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